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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,968	05/14/2001	Futoshi Sakaguchi	2282-0140P	3457

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 10/23/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,968

Applicant(s)

SAKAGUCHI ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 15 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-4 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The rejections under 35 U.S.C. § 112, 102(b) and 103 as described in paper no.7 have been withdrawn in view of the amendment filed on August 15, 2002 and remarks contained therein. Also, the objection to the specification is withdrawn in view of the submission of an abstract. Accordingly, the arguments concerning these rejections are moot and will not be addressed. New rejection follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 and 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-4 and 8-11 are indefinite because the extent the contacting of the catalyst with the nitrogen compound is unclear. For example, no time duration is claimed or no resulting concentration of the nitrogen compound in the catalyst is claimed. Therefore, the scope of the claims cannot be ascertained.

Claim 11 is also indefinite because it depends upon canceled claim 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 6/1, 7/2, 8-10, and 11/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Apelian et al. (5,062,943).

The Apelian reference discloses a process for hydrocracking a hydrocarbon feed such as a gas oil. The process comprises an initial phase in which the hydrocracking catalyst is contacted with an organic nitrogen-containing compound in solution. Specifically disclosed nitrogen-containing compounds include pyridine and quinoline. These compounds have boiling points higher than 200°C. The amount of nitrogen compound that is used is in the range of 1 ppmw to

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1.0 wt%. This initial phase is equivalent to the claimed pre-contacting or contacting of the catalyst with the nitrogen compound. In a second phase of the process, the addition of the nitrogen compound is terminated or reduced to a lower level and the hydrocracking reaction is carried out. The reduction of the addition of the nitrogen compound to a lower level is equivalent to the claimed addition of a catalyst deactivation inhibitor. See col. 3, line 48 through col. 5, line 22 and col. 5, line 67 through col. 6, line 25.

The Apelian reference does not disclose that the nitrogen compound has a boiling point that is lower than a 50% distillation temperature of the feed oil, does not disclose that the petroleum fraction containing an organic nitrogen compound has a 95% distillation temperature that is lower than the 50% distillation temperature of the feed oil as in claim 2, and does not disclose the amount of nitrogen in the catalyst as in claims 6/1 or 7/2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Apelian by using a nitrogen compound that has a boiling point that is lower than a 50% distillation temperature of the feed oil because the nitrogen compounds disclosed by Apelian are the same as disclosed by applicants in their specification and because the feeds disclosed by Apelian boil over wide ranges. Therefore, there would be an expectation of success when using a nitrogen compound that has a boiling point that is lower than a 50% distillation temperature of the feed oil in the process of Apelian.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Apelian by using a petroleum fraction containing an organic nitrogen compound that has a 95% distillation temperature that is lower than the 50% distillation temperature of the feed oil because the disclosure of a specific solvent

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(i.e., toluene) combined with the disclosure that the feeds to the hydrocracking process can boil over wide ranges and are not particularly limited results in the expectation that using the claimed petroleum fraction would produce a successful outcome to the process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Apelian by utilizing nitrogen amounts in the catalyst as claimed because Apelian discloses that the amount used is a result effective variable and should be selected by experiment prior to use.

Claims 3, 4, 6/3, 7/4, and 11/4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Apelian (5,062,943) as applied to claims 1 and 2 above, and further in view of FR 2,668,951.

As discussed above, the Apelian reference does not disclose sulfiding the catalyst either simultaneously with the contacting of the catalyst with the nitrogen compound as in claim 3 or while contacting the catalyst with the petroleum fraction as in claim 4.

The FR 2668951 reference discloses that a hydrocracking catalyst can be activated by simultaneously sulfiding the catalyst and contacting the catalyst with a nitrogen compound. The catalyst may also be sulfided by contacting the catalyst in-situ with a petroleum fraction that contains the nitrogen compound. See the entire document including the translation.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Apelian by sulfiding as disclosed by the FR 2668951 reference because sulfiding is an integral part of the start-up procedure and results in an activated catalyst.

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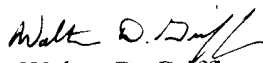
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses hydrocracking processes in which the hydrocarbon is cracked in the presence of nitrogen compounds.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
October 17, 2002